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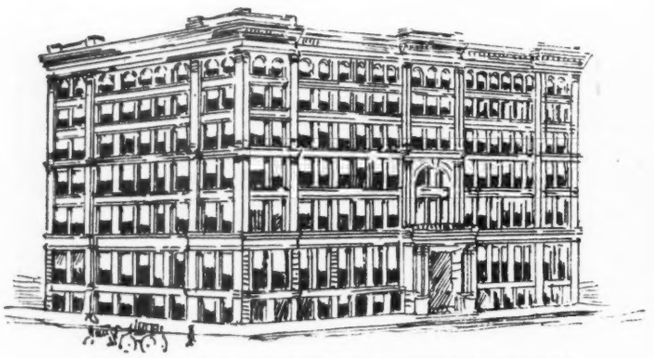
St. Louis Hydraulic Press Brick.

THE increased wealth of the country has created a demand for building materials of better quality than was used in former years, and architectural development and progress have kept pace with this demand, the tendency being toward an increased finish and elaboration of design and construction. It is but a few years since straight bricks, smooth in face, with sharp corners, were sought; then uniformity in color was exacted, which led to the assorting of brick to upwards of a dozen shades.

INSURANCE EXCHANGE BUILDING—BURNHAM & ROOT, ARCHITECTS.
St. Louis Hydraulic Press Brick.

Then ornamental brick was called for by the architects, who saw that ornamentation could be obtained through properly designed and molded brick better than could be secured through the use of stone, till at the present day in almost all parts of the country, especially in the West, the use of pressed brick has, to a great extent, superseded that of stone. The pioneers in the manufacture of pressed bricks in the West were the Hydraulic Press Brick Company, located at St. Louis, Missouri. Their yards were started near the outskirts of that city soon after the close of the war, but it was almost ten years later that the increased use of these bricks called for a large extension of the company's plant. The rebuilding of Chicago, following the great fire, caused such a demand that an agency was established in that city, which was placed in charge of Mr. J. J. Lockwood, and through him the company has since supplied the material for some of the largest brick buildings on the continent. It is deemed appropriate that the architects recently in attendance at the convention of the Western Association (who spent many days inspecting buildings constructed of St. Louis pressed brick) as well as others throughout the country, who have seen and admired these superb brick, should know something of the works where they are manufactured. A special representative was therefore sent to St. Louis, where the company's offices and yards were visited.

The offices are located in the Turner Building, on Eighth street. The officers are, E. C. Sterling, president; H. W. Eliot, secretary. In company with Mr. Eliot, our representative visited the yards. They are five in number, and located at short distances from each other, about five miles from the center of the city. Yard 1 is the oldest, and here the first brick was made in 1868. Yards 3 and 4 were then built, the shipping being largely done from yard 4, where 2,800 feet of private switches enable cars to be rolled in the yards to the kilns, where the brick are loaded and sent without rehandling to any part of the country. Yards 5 and 2, situated about half a mile from the other yards, are devoted exclusively to the manufacture of



FIRST NATIONAL BANK, CHICAGO—BURLING & WHITEHOUSE, ARCHITECTS.
St. Louis Hydraulic Press Brick.

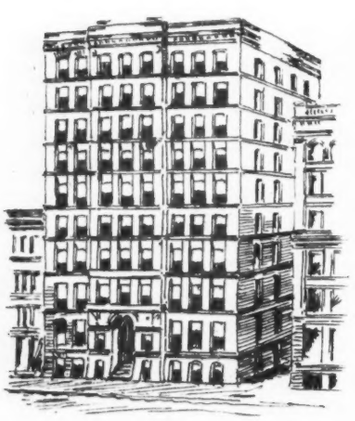
RYAN HOTEL, ST. PAUL—J. J. EGAN, ARCHITECT, CHICAGO.
St. Louis Hydraulic Press Brick.

pressed and molded brick, 85 acres, an inexhaustible quantity of fine clay ground, being set apart for their use. Of these two yards, 5 is the larger, containing, as it does, two presses, twelve patent and four common kilns. There are eight patent, and six common kilns in yard 4; seven patent and three common kilns in yard 3; seven common kilns in yard 2, and eight common kilns in yard 1. There are 3,000 feet of side track and switches at yard 5. All this track is devoted to the exclusive use of the company, and empty cars are placed here at their disposal, so as to avoid any delay in the shipping of any quantity of brick called for.

COMMERCIAL BANK BUILDING, CHICAGO—JAFFRAY & SCOTT, ARCHITECTS.
St. Louis Hydraulic Press Brick.

While in the construction of a brick-making plant everything is for utility and nothing for show, the different processes are most interesting even to the casual observer. Aside from the possession of the most superb clay, it is to the presses and kilns that the excellent quality of this company's bricks is due. The presses are all driven by hydraulic power.

There are two presses at yard 5, one producing five, and one ten bricks at a time, and each of the other yards is equipped with a ten-brick press. The ten-brick presses turn out forty-six hundred brick an hour, and the five-brick presses turn out twenty-five hundred brick an hour. The same presses are used for making common, molded, and pressed brick.



MONTAUK BLOCK, CHICAGO—BURNHAM & ROOT, ARCHITECTS.
St. Louis Hydraulic Press Brick.

ILLINOIS BANK BUILDING—BURNHAM & ROOT, ARCHITECTS.
St. Louis Hydraulic Press Brick.

CALUMET BUILDING, CHICAGO—BURNHAM & ROOT, ARCHITECTS.
St. Louis Hydraulic Press Brick.

The monthly output is now about six million common brick, and a million and a quarter pressed and molded bricks.

The kilns of the company are most elaborate affairs, the idea in their construction being to distribute the heat equally at top and bottom. They are patented, but are too expensive to be used in any but the largest works. They are made entirely of firebrick, and cost from four to five thousand dollars each. About sixty per cent of the brick is available as face or pressed brick; the remainder of the burning is good, hard brick, there being absolutely no loss, so evenly is the heat distributed. The kilns average about thirty feet in diameter, by eighteen feet high, and hold about one hundred thousand brick. The actual burning time is from three to five days, though about ten days is consumed in the process of burning and cooling off. By an arrangement of pipes the hot air is distributed from one kiln to another, so that none of the heat from the burning kilns is wasted, but is turned into the green kilns. This enables the brick to be set direct from the machines, saves handling and consequent breakage, and dries the brick slowly without cracking. After the drying is completed the fires are built, and the heat can be raised at once to the desired temperature. The smoke is carried to a central stack, and this is built very high in order to secure a strong draft, as the kilns are down-draft in construction. For this reason it is noticeable that the brick at the top of the kiln are hardest burnt.

PHOENIX INSURANCE BUILDING—BURNHAM & ROOT, ARCHITECTS.
St. Louis Hydraulic Press Brick.

Connected with yard 1, are extensive machine shops, employing eight machinists and three blacksmiths, the company making all its own dies and repairs.

One hundred and sixty-one head of mules are used for teaming, and about five hundred men are used about the works. As the clay season is over, no work is being done on the clay-hills. It is estimated there is enough clay under shelter to make thirty-six million brick, and three of the yards with patent kilns will run all winter.

The brick made by this company are being sent from Canada to Texas, and from Indiana to Utah. The illustrations given, show a few of the large buildings built of St. Louis hydraulic press brick, and it is worthy of note that the government architect is now specifying this brick.

In the sheds are stored about four hundred thousand molded and ornamental brick, comprising seventy-five different patterns, this number being one-half the quantity that will be on hand for delivery next spring. The company will have three million pressed brick in stock in St. Louis.

Messrs Lockwood & Kimbell, who are the sole agents of the company in Chicago, have sold during the year 1886, four million of this company's pressed and molded brick. Their warehouse is located at 2399 Archer avenue, and offices at 162 Washington street. A large stock is carried at their warehouse, there being now on hand two hundred thousand bricks, enabling them to fill all orders with promptness and dispatch. Among the most notable buildings constructed of this brick, are the Rialto, Calumet, Insurance Exchange, Phoenix Insurance, Montauk Block, First National Bank, Illinois National Bank, and other large buildings, cuts of which are shown in this number.

WEST HOTEL, MINNEAPOLIS—L. L. BUFFINGTON, ARCHITECT.
St. Louis Hydraulic Press Brick.

In order to show the stability and crushing strength of these pressed brick, the following test has been made, and is submitted in full.

This test was made by the Chicago Forge and Bolt Company, at the order of the Hydraulic Press Brick Company's agents in Chicago, Messrs. Lockwood & Kimbell, from bricks taken from general stock without selection. Appended are their signed statements:

REPORT OF TESTS MADE ON BRICK FOR LOCKWOOD & KIMBELL, OF CHICAGO,

BY THE CHICAGO FORGE AND BOLT COMPANY.

TEST No.	MARKS.	STRAIN AT FIRST FRACTURE.	ULTIMATE STRENGTH.	TEST No.	MARKS.	STRAIN AT FIRST FRACTURE.	ULTIMATE STRENGTH.
1	A. No. 3	62,400	114,000	13	Z. A.	19,200	132,000
2	A. No. 2	24,000	168,000	14	Trenton.	32,400	216,000
3	A. No. 1	90,000	192,000	15	Philadelphia.	12,000	132,000
4	**H. P. No. 8.**	**312,000**	**390,000**	16	Milwaukee.	13,200	126,000
5	**H. P. No. 6.**	**216,000**	**324.000**	17	Baltimore.	15,600	192,000
6	**H. P. D. R.**	**180,000**	**342,000**	18	Chicago.	10,800	114,000
7	**H. P. P.**	**252,000**	**432,000**	19	Toledo.	26,400	102,000
8	No. 8.	28,800	192,000	20	P. & K. Ind.	36,000	156,000
9	I. 7.	30,000	168,000	21	H.	56,400	132,000
10	S. 9.	78,000	138,000	22	A. M.	57,600	123,600
11	C. O. B. 4.	24,000	156,000	23	Union.	10,000	210,000
12	M. 10.	12,000	114,006	24	T.	4,800	258,000

CHICAGO, March 23, 1886.

I hereby certify that the following is a true and correct description of the bricks furnished by me to the Chicago Forge and Bolt Company, this day to be tested:

A. No, 3, known as Anderson No. 3,
A. No. 2, " " " 10,
A. No. 1, " " " 14,
} were brick from the Chicago Anderson Press Brick Co.

H. P. No. 8,
H. P. No. 6,
} **were Press Brick from the Hydraulic Press Brick Company, St. Louis.**

H. P. D. R. was common Dark Red Brick from Hydraulic Press Brick Company, St. Louis.

H. P. P. was Paving Brick from the Hydraulic Press Brick Company, St. Louis.

Z. A. was Re-pressed Brick from Townsend & Co., Zanesville, Ohio.

Trenton was Re-pressed Brick from Fell, Roberts & Co., Trenton, New Jersey.

Phil. was Re-pressed Brick from the Peerless Brick Co., Philadelphia.

Mil. was from Burnham & Co., Milwaukee.

Balt. was Re-pressed Brick from Burns, Russell & Co., Baltimore.

Toledo was a Stock Brick from the Toledo Brick Co.

P. & K., Ind., was from Purington & Kimbell Brick Co.

H. was from W. E. Hinchliff & Co.

T. was from Tiffany Brick Co., Momence, Ill.

(Signed) J. J. LOCKWOOD.

CHICAGO, March 23, 1886.

I hereby certify that the following is a true and correct description of the bricks urnished by me to the Chicago Forge & Bol Company, this day to be tested:

No. 8, was a Semi-dry Clay Brick from Ittner Bros., St. Louis, made by the "Andruss" Machine.

I. 7, was the same.

S. 9, was a Semi-dry Clay Brick from the Standard Press Brick Co., St. Louis, made by the "Kennedy" Machine.

C. O. B. 4, was a Semi-dry Clay Brick from the Columbus, Ohio, Brick and Terra-Cotta Co., made by the "Whittaker" Machine.

M. 10, was a hand-made Re-pressed Brick, made by the Menomonie Pressed Brick Co. of Menomonie, Wisconsin.

A. M. was a Dry Clay Brick from Anoka, Minn.

Union, was a Tempered Clay Brick, from the Union Press Brick Works, of St. Louis. made by the "Sword" Machine.

(Signed) H. W. ELIOT.

I hereby certify that the above is a true and correct statement of tests made by me this day with the testing machine of the Chicago Forge and Bolt Company.

[Signed]:

C. WEATHERSEN,
Superintendent.

CHICAGO, March 23, 1886.

PULLMAN'S OFFICE BUILDING—S. S. BEMAN, ARCHITECT.
St. Louis Hydraulic Press Brick.

This brief sketch of the largest pressed brick works in the United States is given, that architects may have positive knowledge of the facilities of the Hydraulic Press Brick Company of St. Louis, for filling any order of any size or description from any part of the country at the shortest notice. Special designs in ornamental brick can be executed, and the company's stock patterns are continually increasing in number. It is no longer said that the use of pressed brick is a fashion. The forms of use may change, but the unquestioned stability of the material, and its plastic conformity to architectural forms, will always contribute to its increased use and favor.